

**WHAT IS CLAIMED IS:**

- 1                   1. A modified low molecular weight heparin (MLMWH) compound  
2                   having a molecular weight of about 5,000 Daltons to about 9,000 Daltons.
- 1                   2. The MLMWH compound in accordance with claim 1, wherein  
2                   said MLMWH compound (1) inhibits fibrin-bound thrombin and fluid-phase thrombin by  
3                   catalyzing antithrombin, and (2) inhibits thrombin generation by catalyzing factor Xa  
4                   inactivation by antithrombin.
- 1                   3. The MLMWH compound in accordance with claim 1, wherein  
2                   said MLMWH compound has an anti-factor IIa activity of about 40 U/mg to about  
3                   100 U/mg, and an anti-factor Xa activity of about 90 U/mg to about 150 U/mg.
- 1                   4. The MLMWH compound in accordance with claim 3, wherein  
2                   said MLMWH compound has an anti-factor IIa activity of about 60 U/mg to about  
3                   75 U/mg, and an anti-factor Xa activity of about 100 U/mg to about 125 U/mg.
- 1                   5. The MLMWH compound in accordance with claim 4, wherein  
2                   said MLMWH compound has an anti-factor IIa activity of about 65 U/mg, and an anti-  
3                   factor Xa activity of about 115 U/mg.
- 1                   6. The MLMWH compound in accordance with claim 1, wherein  
2                   said MLMWH compound has a molecular weight of about 5,400 Daltons to about 8,000  
3                   Daltons.
- 1                   7. The MLMWH compound in accordance with claim 1, wherein  
2                   said MLMWH compound has a molecular weight of about 5,800 Daltons to about 7,000  
3                   Daltons.
- 1                   8. The MLMWH compound in accordance with claim 1, wherein  
2                   said MLMWH compound has a molecular weight of about 6,000 Daltons.

1                   9. A method for treating a thrombotic condition in a mammal, said  
2 method comprising administering to said mammal a pharmacologically acceptable dose of  
3 a modified low molecular weight heparin (MLMWH) compound having a molecular  
4 weight of about 5,000 Daltons to about 9,000 Daltons.

1                   10. The method in accordance with claim 9, wherein said MLMWH  
2 compound (1) inhibits fibrin-bound thrombin and fluid-phase thrombin by catalyzing  
3 antithrombin, and (2) ~~thrombin~~ generation by catalyzing factor Xa inactivation by  
4 antithrombin.

1                   11. The method in accordance with claim 9, wherein said MLMWH  
2 compound has an anti-factor IIa activity of about 40 U/mg to about 100 U/mg, and an  
3 anti-factor Xa activity of about 90 U/mg to about 150 U/mg.

1                   12. The method in accordance with claim 11, wherein said MLMWH  
2 compound has an anti-factor IIa activity of about 60 U/mg to about 75 U/mg, and an  
3 anti-factor Xa activity of about 100 U/mg to about 125 U/mg.

1                   13. The method in accordance with claim 12, wherein said MLMWH  
2 compound has an anti-factor IIa activity of about 65 U/mg, and an anti-factor Xa activity  
3 of about 115 U/mg.

1                   14. The method in accordance with claim 9, wherein said MLMWH  
2 compound has a molecular weight of about 5,400 Daltons to about 8,000 Daltons.

1                   15. The method in accordance with claim 9, wherein said MLMWH,  
2 wherein said MLMWH compound has a molecular weight of about 5,800 Daltons to  
3 about 7,000 Daltons.

1                   16. The method in accordance with claim 9, wherein said MLMWH  
2 compound has a molecular weight of about 6,000 Daltons.

1                   17. The method in accordance with claim 9, wherein said thrombotic  
2 condition is arterial thrombosis.

1                   18. The method in accordance with claim 9, wherein said thrombotic  
2 condition is coronary artery thrombosis.

1                   19. The method in accordance with claim 9, wherein said thrombotic  
2 condition is venous thrombosis.

1                   20. The method in accordance with claim 9, wherein said thrombotic  
2 condition is pulmonary embolism.

1                   21. The method in accordance with claim 9, wherein said MLMWH  
2 compound is administered by injection.

1                   22. A method of preventing the formation of a thrombus in a mammal  
2 at risk of developing thrombosis, said method comprising administering to said mammal  
3 a pharmacologically acceptable dose of a modified low molecular weight heparin  
4 (MLMWH) compound having a molecular weight of about 5,000 Daltons to about 9,000  
5 Daltons.

1                   23. The method in accordance with claim 22, wherein said MLMWH  
2 compound (1) inhibits fibrin-bound thrombin and fluid-phase thrombin by catalyzing  
3 antithrombin, and (2) thrombin generation by catalyzing factor Xa inactivation by  
4 antithrombin.

1                   24. The method in accordance with claim 22, wherein said MLMWH  
2 compound has an anti-factor IIa activity of about 40 U/mg to about 100 U/mg, and an  
3 anti-factor Xa activity of about 90 U/mg to about 150 U/mg.

1                   25. The method in accordance with claim 24, wherein said MLMWH  
2 compound has an anti-factor IIa activity of about 60 U/mg to about 75 U/mg, and an  
3 anti-factor Xa activity of about 100 U/mg to about 125 U/mg.

1                   26. The method in accordance with claim 25, wherein said MLMWH  
2 compound has an anti-factor IIa activity of about 65 U/mg, and an anti-factor Xa activity  
3 of about 115 U/mg.

1                   27. The method in accordance with claim 22, wherein said MLMWH  
2 compound has a molecular weight of about 5,400 Daltons to about 8,000 Daltons.

1                   28. ~~The~~ method in accordance with claim 22, wherein said MLMWH,  
2 wherein said MLMWH compound has a molecular weight of about 5,800 Daltons to  
3 about 7,000 Daltons.

1                   29. The method in accordance with claim 22, wherein said MLMWH  
2 compound has a molecular weight of about 6,000 Daltons.

1                   30. The method in accordance with claim 22, wherein said mammal is  
2 at increased risk of developing a thrombus due to a medical condition which disrupts  
3 hemostasis.

1                   31. The method in accordance with claim 30, wherein said medical  
2 condition is coronary artery disease.

1                   32. The method in accordance with claim 30, wherein said medical  
2 condition is atherosclerosis.

1                   33. The method in accordance with claim 22, wherein said mammal is  
2 at increased risk of developing a thrombus due to a medical procedure.

1                   34. The method in accordance with claim 33, wherein said medical  
2 procedure is cardiac surgery.

1                   35. The method in accordance with claim 34, wherein said medical  
2 procedure is cardiopulmonary bypass.

1                   36. The method in accordance with claim 33, wherein said medical  
2                   procedure is catheterization.

1                   37. The method in accordance with claim 36, wherein said  
2                   catheterization is cardiac catheterization.

1                   38. The method in accordance with claim 33, wherein said medical  
2                   procedure is atherectomy.

1                   39. A method for inhibiting thrombus formation in a patient, said  
2                   method comprising the step of administering to the patient a pharmacologically  
3                   acceptable dose of a modified low molecular weight heparin (MLMWH) compound  
4                   having a molecular weight of about 5,000 Daltons to about 9,000 Daltons.

1                   40. The method in accordance with claim 39, wherein said MLMWH  
2                   compound (1) inhibits fibrin-bound thrombin and fluid-phase thrombin by catalyzing  
3                   antithrombin, and (2) thrombin generation by catalyzing factor Xa inactivation by  
4                   antithrombin.

1                   41. A method for inhibiting fibrin-bound thrombin and thrombin  
2                   generation in a mammal, said method comprising administering to said mammal a  
3                   pharmacologically acceptable dose of a modified low molecular weight heparin  
4                   (MLMWH) compound having a molecular weight of about 5,000 Daltons to about 9,000  
5                   Daltons.

1                   42. A pharmaceutical composition comprising the MLMWH  
2                   compound of claim 1 and a pharmaceutically acceptable carrier.